

**I CLAIM:**

1. A well stimulation tool for stimulating a well having a tubing string suspended from a tubing mandrel, the well stimulation tool comprising:  
  
a well stimulation tool mandrel having an axial bore and bottom end with pin threads for engaging box threads in a top of a central passage through the tubing mandrel, the axial bore having a diameter larger than an outer diameter of a backpressure plug for sealing the central passage through the tubing mandrel to contain well pressure within the tubing string.
2. A well stimulation tool as claimed in claim 1 further comprising a plurality of adapter pins for connection to the bottom end of the well stimulation tool mandrel, to permit the well stimulation tool mandrel to be used for pumping stimulation fluids through tubing mandrels for supporting different sizes of tubing strings, the adapter pins respectively comprising a threaded top end for connection to a bottom end of the well stimulation tool mandrel, a threaded bottom end for connection to the box threads in the top of the central passage through the tubing mandrel and an axial bore having a diameter at a narrowest point that is greater than an outer diameter of a backpressure plug for the tubing mandrel to which the adapter pin is connected.
3. A well stimulation tool as claimed in claim 2 wherein the adapter pin is made of steel having a Rockwell C Hardness of greater than 30.

4. A well stimulation tool as claimed in claim 3 wherein the adapter pin is made of HH1150 stainless steel.
5. A well stimulation tool as claimed in claim 1 further comprising an adapter spool having a bottom flange for connecting to the wellhead, an annular body for receiving the well stimulation tool mandrel, and a top end having threads for engaging a lockdown nut to secure packing for providing a high pressure seal between the well stimulation tool mandrel and the adapter spool.
6. A method of mounting a well stimulation tool to a well having a wellhead which includes a tubing mandrel for supporting a tubing string in the well, comprising:
  - mounting a backpressure plug tool to a top of the wellhead and running the backpressure plug tool through the wellhead to secure a backpressure plug to backpressure threads in a central passage through the tubing mandrel;
  - bleeding well pressure from the wellhead above the tubing mandrel;
  - removing a control stack of the wellhead above the tubing mandrel;
  - mounting the well stimulation tool to the wellhead;
  - and
  - mounting a backpressure plug tool to a top of the well stimulation tool and running the backpressure plug tool through the well stimulation tool to remove the backpressure plug

to permit stimulation fluids to be pumped into the well.

7. The method as claimed in claim 6 further comprising:  
equalizing well pressure across the tubing mandrel after the backpressure plug tool is mounted to a top of the well stimulation tool, and before the backpressure plug tool is run through the well stimulation tool to remove the backpressure plug from the tubing mandrel.
8. The method as claimed in claim 7 further comprising:  
removing the backpressure plug tool from the well stimulation tool;  
connecting at least one high pressure line to the well stimulation tool; and  
pumping high pressure fluids into the well to stimulate production from the well.
9. A method of removing a well stimulation tool from a tubing mandrel of a live well, the method comprising:  
sealing a production tubing of the well by inserting a backpressure plug through a well stimulation tool mandrel of the well stimulation tool to seal a central passage through the tubing mandrel;  
releasing fluid pressure from the well stimulation tool mandrel; and  
removing the well stimulation tool from the well.
10. A method of stimulating a well having a wellhead that includes a tubing mandrel from which a tubing string is suspended in the well, comprising:

mounting a well stimulation tool to a top of the tubing mandrel after a backpressure plug has been secured to backpressure plug threads in the tubing mandrel;

mounting a backpressure plug tool to the well stimulation tool;

balancing well pressure across the tubing mandrel;

running through a well stimulation tool mandrel of the well stimulation tool with the backpressure plug tool and retrieving the backpressure plug;

removing the backpressure plug tool from the well stimulation tool and connecting at least one high pressure line to the well stimulation tool; and

pumping well stimulation fluids through the at least one high pressure line and the well stimulation tool mandrel into the well.

11. The method as claimed in claim 10 further comprising, prior to mounting the well stimulation tool to the top of the tubing mandrel, determining a diameter of the tubing string suspended in the well and choosing an adapter pin of a size required to make a connection to box threads in a top of a central passage through the tubing mandrel.

12. A well stimulation tool mandrel for a well stimulation tool having a bottom end with a pin thread for engaging a box thread in a top of a central passage through a tubing mandrel that supports a tubing string in a wellbore, comprising an axial bore through which well stimulation fluids are pumped to stimulate a production zone that

communicates with the wellbore, the axial bore having a diameter adequate to permit a backpressure plug to be reciprocated therethrough.

13. An adapter pin for a well stimulation tool, the adapter pin being connected to a bottom end of a well stimulation tool mandrel of the well stimulation tool, the adapter pin having a bottom end with a pin thread for engaging a box thread in a top of a central passage through a tubing mandrel that supports a tubing string in a wellbore, and the adapter pin comprising an axial bore through which well stimulation fluids are pumped to stimulate a production zone that communicates with the wellbore, the axial bore having a diameter adequate to permit a backpressure plug to be reciprocated therethrough.
14. A well stimulation tool mandrel and an adapter pin, in combination, for a well stimulation tool, the adapter pin being connected to a bottom end of the well stimulation tool mandrel and having a bottom end with a pin thread for engaging a box thread in a top of a central passage through a tubing mandrel that supports a tubing string in a wellbore, the well stimulation tool mandrel and the adapter pin respectively comprising an axial bore through which well stimulation fluids are pumped to stimulate a production zone that communicates with the wellbore, the axial bores having respective diameters adequate to permit a backpressure plug to be reciprocated therethrough.
15. A method of sealing a tubing string of a well after a production zone that communicates with a wellbore of

the well has been stimulated by pumping high pressure fluids through a well stimulation tool connected to a tubing mandrel that suspends the tubing string in the well, comprising running a backpressure plug through the well stimulation tool and securing the backpressure plug to backpressure plug threads in a central passage through the tubing mandrel.